

REMARKS/ARGUMENTS

Claims 25-49 are pending. Independent Claim 25 has been revised in view of page 26, lines 1-2 of the specification. No new matter has been added.

Rejection—35 U.S.C. §103

Claims 25, 26, and 31-38 were rejected under 35 U.S.C. 103(a) as being unpatentable over Turner et al., U.S. Patent No. 6,307,099, in view of Beard et al., WO 00/71226. The cited prior art does not render the claimed process obvious because it does not disclose or suggest a process not employing a conventional drying step, or provide a reasonable expectation of success for a process using a step of drying using the “internal energy released by the movement of the compound”. As now specified by Claim 25, the drying step decreases liquid content of the cake to not more than 10%, thus quantifying the increased degree of dryness beyond what would have been expected from the prior art process. The increase in the degree of dryness is important since it reduces the energy cost conventionally needed to dry the cake and provides a simpler chemical process, see e.g., page 3, third paragraph, of the specification.

Turner does not disclose or suggest the process of the present invention, because it is directed to a reaction process in which a product and solvent recovery step is described after a reactor and other steps are described even after the recovery step. The Official Action indicates that Turner differs from the claimed process solely with respect to the drying step, in which according to Turner the “product may be recovered via line 30 for drying. . . .Drying of the product may be carried out in for example a rotary steam tube drier or a fluidized bed drier.” (Fig. 1, col. 13, lines 54 *ff.*). Clearly, Turner contemplates a conventional drying step after a solid-liquid separation and does not suggest step (C) of the invention.

On the other hand, in the process of the invention, a conventional drying step using an apparatus such as a rotary steam tube drier or a fluidized bed drier is not required after the recovery step. Since a drier is unnecessary, energy used in the drying step is reduced and a simple process is provided--see the specification, page 3, 3rd full paragraph which discloses that an "object of the invention is to reduce the use of energy in the drying step by utilizing internal energy that the slurry after reaction has, and. . .to greatly reduce energy to be used by drying the cake only by internal energy". Omission of an element (step) with retention of the element's function is an indicia of non-obviousness, MPEP 2144.04 (II)(B), *In re Edge*, 149 USPQ 556 (CCPA 1966). Here, unlike the prior art process, the claimed process does not require a conventional drying step after recovery step (C).

Beard does not provide any motivation for incorporating the internal-energy using drying step (C) of the present invention into the method of Turner. Nor does Beard suggest omitting a conventional drying step, such as those using a rotary steam tube drier of a fluidized bed drier, required by the Turner process.

While Beard describes a discharge valve, it is silent about the result of drying after the discharge value step. In fact, the Beard abstract indicates "Subsequently, the depressurized solid phase material can be conveyed to other equipment for **drying** or other processing (emphasis added)" and lines 5-6 from the bottom of page 5 contemplate "(g) conveying the depressurized solid phase material to a **dryer** (emphasis added)". Thus, even though page 4 of Beard refers to "flashing" of the solid phase material, it does not suggest drying step (C) of the invention which requires moving the separated solid into a compound recovery zone under conditions in which the internal energy released by the movement of the compound into the compound recovery zone evaporates the cake-attached liquid. Therefore, Beard cannot provide a reasonable expectation of success for the present invention and provides no motivation for performing step (C) of the invention in conjunction with the process described

by Turner et al. Moreover, neither Turner nor Beard disclose or suggest the other specific process conditions required by the dependent claims and both describe conventional drying steps not required by the invention. Accordingly, the Applicants respectfully request that this rejection be withdrawn.

Rejection—35 U.S.C. §103

Claims 27-30 and 39-49 were rejected under 35 U.S.C. 103(a) as being unpatentable over Turner et al., U.S. Patent No. 6,307,099, in view of Beard et al., WO 00/71226. The Applicants respectfully request that this rejection be withdrawn for the reasons discussed above. The Official Action indicates that it would have been obvious to optimize the process parameters disclosed by these references to produce a purer product at a higher speed. However, the cited prior art does not indicate which reaction parameters to optimize (i.e., which parameters are “results effective”). As discussed above, neither Turner, nor Beard suggest processes which omit conventional drying steps. Therefore, one with ordinary skill in the art would not have had a reasonable expectation of success for practicing the present invention based on the teachings of these documents. Accordingly, the Applicants respectfully request that this rejection also be withdrawn.

CONCLUSION


In view of the above amendments and remarks, the Applicants respectfully submit that this application is now in condition for allowance.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413-2220
(OSMMN 08/03)


Thomas M. Cunningham, Ph.D.
Registration No. 45,394